

U.S. Patent Application Serial No.: 10/523,975

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended): A method of automatically marking an article which is transferred in one direction, comprising the steps of:

storing in advance a pattern for coloring an outer surface of the article with a plurality of coloring agents of respective colors different from each other;

detecting a transfer speed of the article with a pair of rotors;

outputting a pulse signal from the rotors to a pulse count circuit;

counting a number of the pulse signals with the pulse count circuit;

supplying the coloring agents;

supplying pressurized gas into a coloring agent supply source; [[and]]

spouting a plurality of the coloring agents of respective specific amount, as a single drop at a time, to form aligned spots on the outer surface of the article, from a plurality of separate and spaced nozzles, for each respective color, arranged in a longitudinal direction of the article being transferred, each nozzle having a separate coloring agent supply source connected therewith and a valve disposed between the nozzle and the coloring agent supply source and connected to the pulse count circuit, toward the outer surface of the article according to the pattern in response to ~~the detected transfer speed~~; a signal from the pulse count circuit; and

forming round spots in a plan view on the outer surface of the article,

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wherein the coloring agents, as a single drop at a time, are spouted toward the outer surface of the article with the aid of bias of the supplied pressurized gas.

Claim 2 (Original): The method of automatically marking an article according to claim 1, wherein the article is an electric wire.

Claim 3 (Currently Amended): A device for automatically marking an article which is transferred in one direction, comprising:

storing means for storing a pattern for coloring an outer surface of the article with a plurality of coloring agents of respective colors different from each other;

~~detecting means~~ a pair of rotors for detecting a transfer speed of the article;

a pulse count circuit for receiving a pulse signal from the rotors and counting a number of the pulse signals;

a plurality of separate and spaced nozzles, for each respective color, arranged in a longitudinal direction of the article being transferred, each nozzle having a separate coloring agent supply source connected therewith for supplying the coloring agent to the corresponding nozzle and a valve ~~provided~~ disposed between the nozzle and the coloring agent supply source and connected to the pulse count circuit, for spouting the coloring agents of respective colors different from each other of respective specific amount, as a single drop at a time, to form aligned spots on the outer surface of the article, toward the outer surface of the article; and

control means to make a plurality of the nozzles spout the coloring agent, as a single drop

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at a time, toward the outer surface of the article according to the pattern in response to ~~the transfer~~
~~speed of the article detected by the detecting means~~ a signal from the pulse count circuit; and

a pressurized gas supply source connected to the plurality of the coloring agent supply sources for supplying pressurized gas to the plurality of the coloring agent supply sources,

wherein when the valve is opened, the coloring agents existing in the nozzles are spouted, as a single drop at a time, toward the outer surface of the article with the aid of bias of the pressurized gas supplied from the pressurized gas supply source in order to form round spots in a plan view on the outer surface of the article.

Claim 4 (Previously Presented): The device for automatically marking an article according to claim 3, wherein a plurality of the nozzles are arranged along the transfer direction of the article and the control means makes the nozzles spout the coloring agent according to a distance between the nozzles.

Claim 5 (Previously Presented): The device for automatically marking an article according to claim 3, wherein a plurality of the nozzles are also arranged along a circumferential direction around the article.

Claim 6 (Previously Presented): The device for automatically marking an article according to claim 5, wherein the nozzles spouts the coloring agent as a drop through an opening, which faces the outer surface of the article, a straight line obtained by connecting a center of the opening and a

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center of the article runs along a spouting direction of the coloring agent, and the spouting direction crosses both perpendicular and horizontal directions at an angle of 45°.

Claim 7 (Previously Presented): The device for automatically marking an article as claimed in any one of claims 3 – 6, further comprising a device body for receiving the storing means and the control means, wherein the device body comprises a plurality of connectors for connecting the device body to the nozzles and the connectors are provided in the same number as that of the nozzles according to the respective nozzles.

Claim 8 (Previously Presented): The device for automatically marking an article as claimed in any one of claims 3-6, wherein the article is an electric wire.

Claim 9 (Original): The device for automatically marking an article according to claim 8, wherein the electric wire is put in an electric wire cutting machine which cuts the electric wire after transferring the electric wire in said one direction.